AUCTORES
Globalize your Research

Journal of Brain and Neurological Disorders

Thaddaeus C. Dachille *

Open Access

Research Article

The Broken Canvas: Theorized Implications of the Neuralink Invasive Brain-Machine Interface Technology on Artists and Art Production Methods

Thaddaeus C. Dachille

D.Ed., Curriculum and Instruction Indiana University of Pennsylvania M.A., Adult Education and Communications Technology B.A., Fine Art, Cum Laude graduate Indiana University of Pennsylvania.

***Corresponding Author**: **T**haddaeus C. Dachille, D.Ed., Curriculum and Instruction Indiana University of Pennsylvania M.A., Adult Education and Communications Technology B.A., Fine Art, Cum Laude graduate Indiana University of Pennsylvania.

Received Date: 15 April 2024 | Accepted Date: 01 May 2024 | Published Date: 24 May 2024

Citation: Thaddaeus C. Dachille, (2024), The Broken Canvas: Theorized Implications of the Neuralink Invasive Brain-Machine Interface Technology on Artists and Art Production Methods, *J. Brain and Neurological Disorders*, 7(3): **DOI:10.31579/ 2642-973X/104**

Copyright: © 2024, Thaddaeus C. Dachille. This is an open-access article distributed under the terms of The Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

This article describes several scenarios involving professional artists and how they would respond to the mass adoption of Neuralink's novel invasive brain-machine interface application. However, before discussing these scenarios about artists, the author introduces the topic by discussing the general phenomena of the novel Neuralink technology and its recent implantation into the first human subject. Then, the author refocuses the article to discuss how this technology could affect artists, particularly their production methods and the creative mindset used to approach artwork development. In the paper's conclusion, the author switches between artists and general humanity to suggest that the quest for deeper sources of knowledge is not new but has been an ongoing pursuit since the dawn of time. The author suggests we use caution and discretion when approaching brain-machine interface technology based on history.

Key Words: artists; neuralink; invasive brain-computer interface applications; neurological technology; dystopian future scenarios

Introduction

What was once considered science fiction has become a reality, with the first human patient to receive an invasive brain-machine interface implanted by Neuralink in 2024 (Wood, 2024, March 29). The patient is a young male in his late 20s who is paralyzed from the neck down and is the first technologically evolved human being. He has a customized device in his brain that boasts "on-board signal compression, reduced power consumption, wireless power transmission, and data telemetry through the skin without percutaneous leads" (Musk, 2019, p. 10). This advanced technology allows the implant candidate to operate his laptop computer with his thoughts. The recipient said he is "thankful" and "blessed" to have the ability to control his computer from his mind (Farzad, 2024, March 23). As a spokesperson for this project, he is well-organized, charming, and enthusiastic. Notably, the patient said the neurological device has improved his life and given him more freedom.

From watching the video posted on the social media platform X (formerly known as Twitter) and seeing first-hand what the patient can do, this device changes everything from this day forward. The patient is now the first technologically evolved human. He could probably change his name to Human 2.0, presumably. With this brain chip, he can connect to any Wi-Fi signal or Internet of Things (IoT) device. Imagine the patient turning on all the lights in his house only with his thoughts or transcribing a document on his computer as he thinks of each word. As strange as this sounds, the utility of this technology could make the present physical manipulation of everyday objects, like putting a key into a lock, turning on a light switch, or pressing the power button on a remote control for a television, an outdated mode of life. On the surface, this technology appears to benefit all mankind. Even someone without unique physical or mental difficulties could use this brain enhancement technology to streamline their workflow, watch Netflix, check their bank account, or order a pizza.

The invention of an invasive brain-machine interface is an example of the Cyclic Innovation Model (CIM), which emphasizes a feedback circle, often described as a loop, involving a continuous conversation between all the stakeholders while the product is being innovated (Berkhout et al., 2006). This involves live data and continuous development, spearheaded by an interdisciplinary team of researchers, engineers, and medical doctors who will continue to develop the product through its lifespan. With CIM, the researchers can better calibrate their design using a

dynamic and ongoing interaction process. This will inevitably speed up the design and manufacture of this commercially viable technology, leading to a mass production scenario. It is presumable that in a short timeframe, more advancements will occur, and additional patients will be implanted with this brain enhancement device.

Prior to human subject selection, Musk (2019) said that "our approach to brain-machine interfaces is highly extensible and scalable" (p, 11). Musk's desire to make this technology "scalable" identifies one of the primary premises for writing this document: theorizing the possible large- scale adoption of this technology. The Neuralink technology is "customizable depending on the task requirements"; therefore, it could be available to more patients in just a few months (p. 11). Most ominously, the time of the technologically evolved human is upon us.

With this tempting digital mind augmentation technology on the horizon, it is vital to ponder the newfound spectrum of possibilities and how one should approach this topic. From an artist's perspective and the lens used in this article, this subject considers current and future artists and how digital/personal brain augmentation would provide these professionals with new opportunities, cognitive enhancements, and visual possibilities. With this consideration, modifying a unique human mind to improve an artist's career appears quite enticing, and this mind-altering technology's opportunities appear as limitless as science fiction.

How an artist could benefit from this neurological technology

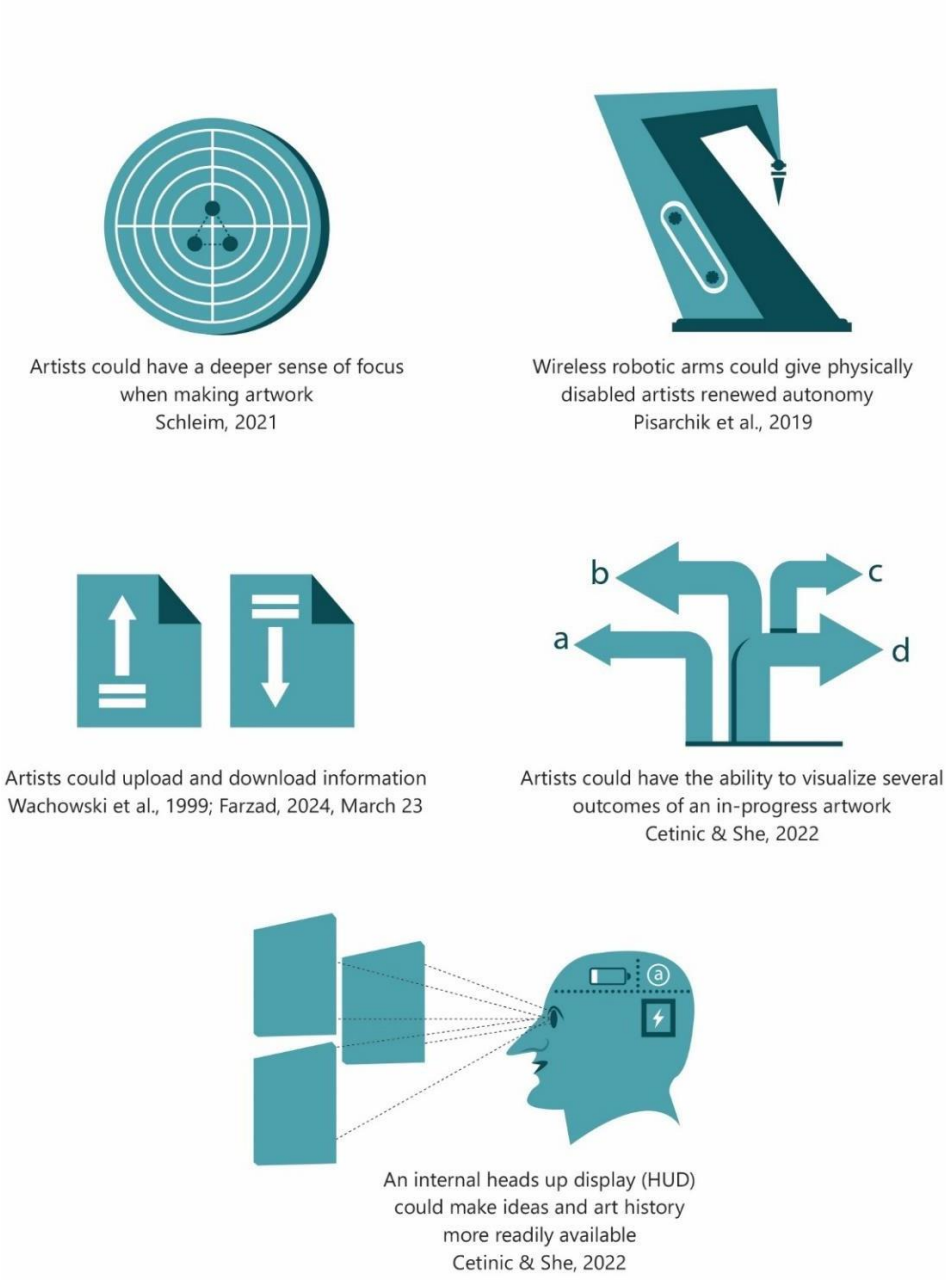
From an artist's standpoint, it is clear how this technology would benefit people in the creative disciplines of graphic design, interior design, or architecture. As a representative of other artists, the author presumes that an artist's thoughts and feelings could be amplified or even stimulated with this technology, based on research by Jose Delgado (Schleim, 2021). The late Jose Delgado prophetically suggested the origins of this modern neurological device in his 1969 book, the *Physical Control of the Mind*. In this book, Delgado found that he could manufacture or minimize various feelings in the mind that could be very valuable to someone in a creative field. Similarly, artists could use this Neuralink technology to provide a deepened sense of command over themselves. If applied to the visual arts, this technology could improve an artist's control and focus and the ability to manipulate the fine motor skills utilized in fine art.

One 21st-century artist, the late Chuck Close, could have significantly benefited from this technology. He suffered from a spinal artery collapse that challenged him so profusely that he changed his style from hyper-realistic to more abstract (Chuck Close, 2024, April 10). In this life-altering transition, Close could no longer manipulate his artmaking tools in the same manner he could before his injury. As an example of an adaptive and creative individual, Close never complained about his disability and only cited it as a means of inspiration; however, he more than likely could have utilized mental technology in his career if it were available in his lifetime (Rojas, 2023). Perhaps, if he were alive today, Close could wirelessly connect to a robotic arm that manipulates paintbrushes and articulates them simultaneously with his thinking (Pisarchik et al., 2019). Mental technology would have enabled Close to continue in his former style, which first brought him fame and success.

The lengthy personal commitment to artmaking, which often took people like Albrecht Dürer or Rembrandt van Rijn a lifetime to develop, could be uploaded to a person within minutes with a hybrid digital and human mind. This idea of the possibility of uploading new information to a human mind with mental technology is from the 1999 movie *Matrix*. In this movie, the protagonist uploads the comprehension of how to fly a sophisticated aircraft into his mind and then takes the helicopter on a death-defying flight to save a peer from near death (Wachowski et al., 1999). With a hybrid digital and human mind, what once took years to learn could be fortuitously gained with little or no personal challenge. This theorized ability to upload information is based on the current technology and descriptions from engineers who can now download data from the patient’s mind using a data port in his human brain interface (Farzad, 2024, March 23).

A final possible improvement to the artist includes the prospect of an internal heads-up display (HUD). In the mind, the internal screen could give artists enhanced visualizations that assist them with pertinent information. Like an information kiosk at a crossroads thoroughfare, the overlaying information could provide the artist with additional means to see images on top of a physical canvas through the vast imagination of the brain. Another emerging advancement that could potentially arise with this neurological device is the ability to visualize several outcomes of an in-progress artwork, especially if the invasive brain-machine interface has artificial intelligence (Cetinic & She, 2022).

With an internal HUD, art history would also be more readily available inside the mind of an artist. For instance, mental technology could help creative people visualize and recall every painting in an entire museum collection at a moment's notice just by thinking about these images. Entire cultural summaries could then be thumbed over. A person cannot comprehend the value of seeing all the famous artworks of ancient Greece in one viewing (Cetinic & She, 2022). Then, the utility of asking the mental device to showcase all these images but with enhanced AI to see how they would look in their original condition. For instance, how did the Parthenon look before it collapsed? Or was the Parthenon painted with bright colors? One can only guess that these hypothetical situations are just around the corner of tomorrow. Other enhancements with visualization and a HUD could include telepathically working with peers from geographically different places to develop work together collaboratively. The possibilities of design and collaboration for an artist seem endless with invasive brain enhancement technology.



Note. This visualization includes the perceived attributes that artists could expect in future human-brain interface technology once this technology becomes more sophisticated.

Figure 1: *Visualization of the Theoretical Future Benefits to Artists with Mental Technology*

How this neurological technology could disadvantage artists

With the many positive things to consider about this technology, there are also pessimistic scenarios for an artist to consider. As this technology advances, more people will install it into their bodies. With this belief, expressed by Silva (2018), artificial intelligence (AI) will eventually make its way into these invasive neurological devices [10]. Beyond Silva (2018), Neuralink also has plans to include AI in the human mind; Neuralink has stated that they plan to "achieve symbiosis with AI" (Kulshreshth & Lakanpal, 2019, October, p, 4). When that inevitable day occurs, an AI-infused mental chip will radically change the landscape of metacognition, the art world, and the artist's mind. To place AI in an artist's mind may not be an advancement for the better.

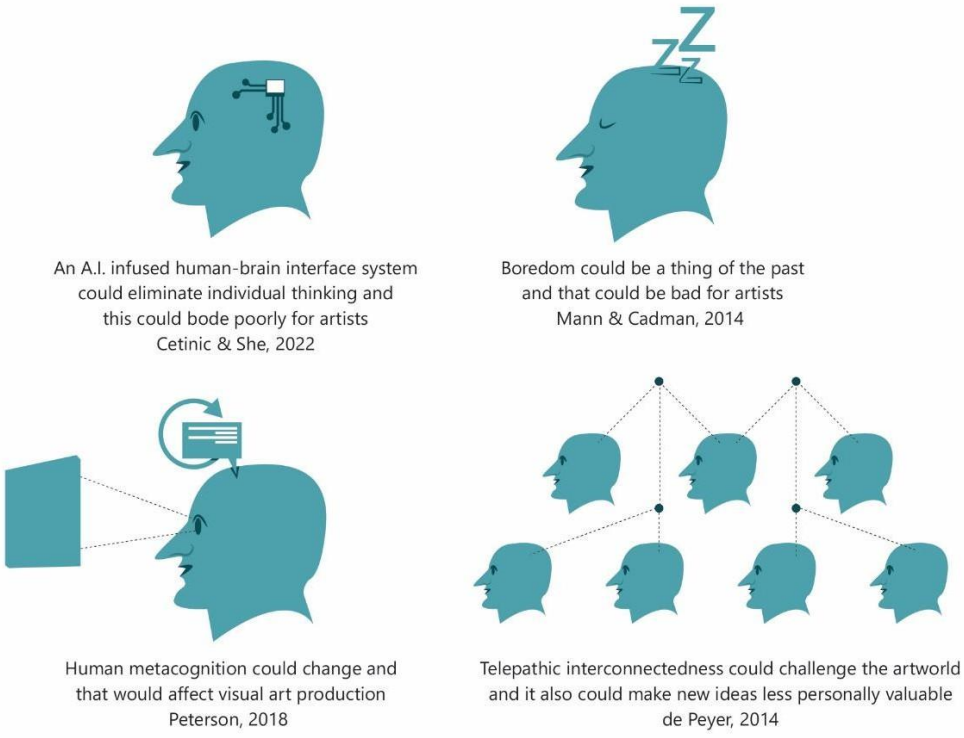
With AI, the task of developing an original image, the ability to complete a large painting, and summoning the focus necessary to consider the complexities of color theory or composition could be operationalized in only a few minutes (Cetinic & She, 2022). If a future invasive brain-machine interface is embedded with artificial intelligence technology, then the art form of developing visual information in the mind could be exclusively completed in nanoseconds by an internal AI system. This would eliminate individual thinking, the visualizations generated in our

minds, and the reinforcement and development of our creative imagination.

With the advancement of this technology, there is also a concern about the loss of boredom. Many people, including this author, have personally benefited from being bored and noticed its many creative advantages from being bored. Certain moments of boredom can impel people to create new ideas. Mann and Cadman (2014) postulate that when someone becomes bored, they "lose interest in it (a presumed object of focus) and turn (their) attention to other stimuli," this is an inter-shift the mind takes to occupy itself (p.5). This process stimulates the development of new and inventive ideas. A bored person moves the "inner focus," which "allows a way of gaining the stimulation that is being craved and that is missing from the boring task" (p. 6). To put it another way, being bored is not such a bad thing. To stifle boredom with a constant buzz of mental stimulation might deplete idea production in the visual arts.

Perhaps of most concern to any artist is the fear that the very act of thinking could change with this technology. As described by Jordan B. Peterson in his book *12 Rules for Life: An Antidote to Chaos*, thinking is a back-and-forth collaboration between two viewpoints in the human mind (Peterson, 2018). Like Peterson's description, having a rich and meaningful discussion between these two avatars within the mind takes time. Profoundly, it is only with this process that one develops newfound viewpoints. The deep contemplative thinking necessary to create any emotionally rich art piece occurs when one (a) takes the time to look at the artwork one is making and (b) diligently converses internally about this in-progress imagery. In this process, an artist considers many factors. These elements may include but are not limited to the warmth or coldness of the colors in the painting, the viewer's perspective, and the focal point or lack thereof. Again, it takes time to enter the mind, make these considerations, and have these conversations within yourself. Without these inner discussions and the reflexive cognition, one needs for this inner discussion, artwork and the depth needed for its development could be inhibited by this technology.

With this technology, there is also a concern about the digital conformity of the human mind. This notion is an extension of the concept known as benchmarking, derived from the corporate world. With benchmarking, comparisons are continuous and critical for a company's growth (Lankford, 2002). When used in a corporate setting, every team member works towards the same goal with maximum efficiency in mind. Ponder the notion of an extensive network of minds, grouped with invasive digital technology, wired to each other. The telepathic interconnectedness would provide a newfound Wikipedia-like databank of knowledge (de Peyer, 2014). Stolen ideas, or intellectual theft, would be immediately absorbed into the collective hive of indistinguishable thinking. Largescale interconnection of this nature and the grouped mindset centered around absolute focus on collective goals would distill meaningful, diverse thinking. More importantly, there is the potential for losing personal drive because of the overt collaborative spirit. Less personal drive could result in less personal competition and ambition and, therefore, less innovation.



Note. This visualization contains only the perceived negative attributes of future human-brain interface technology and how this hypothetical neurological technology could harm visual artists.

Figure 2: *Visualization of the Theoretical Disadvantages to Artists Who Utilize Mental Technology in the Future*

Conclusion

People have always wanted to enhance their knowledge to a godlike status. In one of the oldest known texts, the Bible, in the book of Genesis, Adam and Eve were tempted by a snake to eat the forbidden fruit in the middle of their garden. In the story, they were told explicitly by God Himself not to eat this fruit. They rebelliously ate the fruit anyway because they believed they would be like a god and know both good and evil. According to the Bible, their desire to be like a god, with profound wisdom, was the very reason that a curse was placed on humanity. The lesson learned from this early act of disobedience includes a looming profound negative consequence attached to any desire to become godlike with our mental aptitude.

Taking it upon ourselves to upgrade our knowledge base introduces ethical implications about the essence of our humanity. The mind, each set of unique circumstances surrounding the diversity of each individual, and the thought patterns therein make us distinctively human and separate us from other mammals. To change the mind with an implanted microchip on an imperial scale with worldwide implications would forever alter humanity. To this point, Heraclitus said it best in his ancient proverb that warns, "No man ever steps in the same river twice, for it's not the same river and he's not the same man" (Goodreads, n.d.). Fundamentally, the swiftly moving river of the mind should not have new purpose-built channels. The banks of the river would flood with neurological indulgence, and the implications are not fortuitous for the artist and individual freedom of thought.

To infringe upon the human mind and reshape everyone with similar augmented thinking capabilities would undoubtedly hamper the biology and natural functioning of each human being. It would reduce everyone down to the same baseline intelligence. With this postulation, if everyone has a nearly equal intelligence quotient (IQ), the development of unique visual ideas could be diminished or almost disappear entirely. After the collapse of human individuality, the entire structure of human expression in the art world would soon suffer formidable damage.

References:

1. Wood, A. (2024, March 29). *First Human Patient to Receive a Neuralink Brain Implant Used it to Stay Up All Night Playing Civilization 6*. IGN. Retrieved April 12, 2024
2. Musk, E. (2019). An integrated brain-machine interface platform with thousands of channels. *Journal of medical Internet research*, 21(10), e16194.
3. Farzad. (2024, March 23). *First Neuralink patient leaves audience speechless.* [Video].
4. Berkhout, A. J., Hartmann, D., Van Der Duin, P., & Ortt, R. (2006). Innovating the innovation process. *International journal of technology management*, 34(3-4), 390-404.
5. Schleim S. (2021). Neurorights in History: A Contemporary Review of José M. R. Delgado's "Physical Control of the Mind" (1969) and Elliot S. Valenstein's "Brain Control" (1973). *Frontiers in human neuroscience*, 15, 703308.
6. Chuck Close. (2024, April 10).
7. Rojas, B. (2023). The Artist Chuck Close.
8. Pisarchik, A. N., Maksimenko, V. A., & Hramov, A. E. (2019). From novel technology to novel applications: Comment on "An integrated brain-machine interface platform with thousands of channels" by Elon Musk and Neuralink. *Journal of medical Internet research*, 21(10), e16356.
9. Wachowski, A., Wachowski, L., Reeves, K., Fishburne, L., Moss, C. A., Weaving, H., ... & Staenberg, Z. (1999). *Matrix*. Burbank, CA: Warner Home Video.
10. Silva, G. A. (2018). A new frontier: The convergence of nanotechnology, brain machine interfaces, and artificial intelligence. *Frontiers in neuroscience*, 12, 408236.
11. Cetinic, E., & She, J. (2022). Understanding and creating art with AI: Review and outlook. *ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)*, 18(2), 1-22.
12. Kulshreshth, A., An and, A., & Lakanpal, A. (2019, October). Neuralink-an Elon Musk start-up achieve symbiosis with artificial intelligence. In *2019 International Conference on Computing, Communication, and Intelligent Systems (ICCCIS)* (pp. 105-109). IEEE.
13. Mann, S., & Cadman, R. (2014). Does being bored make us more creative? *Creativity Research Journal*, 26(2), 165-173.
14. Peterson, J. B. (2018). *12 rules for life: An antidote to chaos*. Random House Canada.
15. Lankford, W. M. (2002). Benchmarking: Understanding the basics. *The Coastal Business Journal*, 1(1), 8.
16. de Peyer, J. (2014). Telepathic entanglements: Where are we today? Commentary on paper by Claudie Massicotte. *Psychoanalytic Dialogues*, 24(1), 109-121.
17. Goodreads (n.d.). *Heraclitus > Quotes > Quotable Quote*. Goodreads.com. Retrieved April 14, 2024.

This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article, Click Here: **Submit Manuscript**

DOI:10.31579/ 2642-973X/102

Ready to submit your research? Choose Auctores and benefit from:

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more https://auctoresonline.org/journals/brain-and-neurological-disorders